

SERVICE INFORMATION BULLETIN

Bulletin: 00-08-01

Date: 2/00

Subject: REVISED STEERING COMPONENT REPLACEMENT PROCEDURES

Models Affected: ALL MODEL YEAR VEHICLES

BACKGROUND

Revised steering component replacement procedures have been developed to extend the service life of the pitman arm, idler arm and tie rod ends.

When replacing idler and pitman arms, performing the proper tightening sequence is important for maximum component life. Both the idler and pitman arms have fixed tapered studs where they attach to the center link. These studs are designed for axial (rotational) movement as the steering operates but they are not intended to experience radial (swiveling) movement like a ball joint or tie rod end. The steering gear end of the pitman arm attaches to the steering gear shaft splines which also allows for rotational movement only.

The tightening procedure starts by tightening the pitman arm to the steering gear shaft first, then tightening the pitman taper stud and the idler taper stud to the center link. By leaving the idler arm to frame mount bolts loose, all three of the previously tightened rotational points are free to rotate without binding. The last step is to set the wheels in the straight ahead position and tighten the idler arm to frame mount bolts.

For replacement of a pitman arm and/or center link only, loosen the idler arm to frame mount bolts prior to tightening the taper stud(s) to the center link. After the pitman arm to steering gear shaft connection and the taper stud(s) are tightened, set the wheels in the straight ahead position and tighten the idler arm to frame mount bolts.

After installing tie rod ends in the tie rod sleeve and before final tightening of the sleeve clamp hardware, center the tie rod end studs in the sockets. If the stud and socket are not properly aligned, a partial or complete lockout of stud swing could result. Limiting stud swing can increase component wear and a complete lockout will impede rotational movement during suspension travel.

PROCEDURES

Pitman Arm Replacement

Removal

1. Raise and support the front of the vehicle.
2. Remove the nut and lock washer from the steering gear shaft (See Figure 1). Using puller J-42548, remove the pitman arm from the steering gear shaft.



3. Remove the cotter pin and slotted nut from the center link end of the pitman arm.
4. Using puller J-24319-B or equivalent, remove the pitman arm from the center link.
5. Loosen the idler arm to frame mount bolts to allow movement of the idler arm when the pitman arm is tightened to the center link.

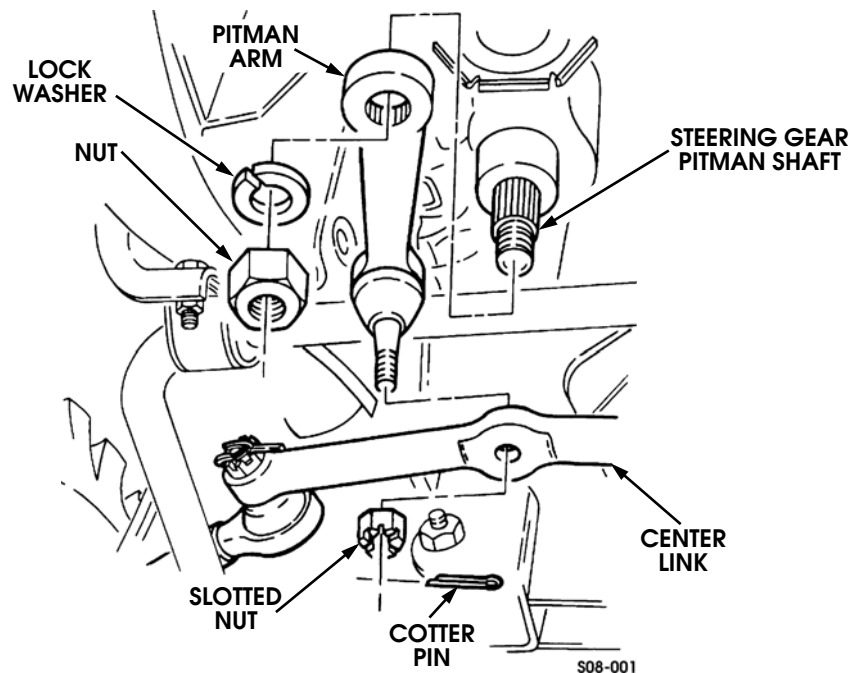


Figure 1: Pitman arm replacement.

Installation

1. Secure pitman arm to steering gear shaft with the lock washer and nut. Tighten the nut to 185 lb-ft (251 N•m).
2. Secure the pitman arm to the center link with the slotted nut. Tighten the slotted nut to 80 lb-ft (108 N•m).
3. Install the cotter pin through the slotted nut. If necessary, tighten the slotted nut to align the holes for cotter pin insertion. **DO NOT** back off the slotted nut to align the holes.
4. Place the wheels in the straight ahead position and tighten the idler arm to frame bolts to 60 lb-ft (81 N•m).
5. Lubricate the pitman arm and lower the vehicle.

Idler Arm Replacement

Removal

1. Raise and support the front of the vehicle.
2. Remove the cotter pin and the slotted nut securing the idler arm to the center link (See Figure 2).
3. Using puller J-24319-B or equivalent, disconnect the idler arm from the center link.
4. Remove the bolts, washers and locknuts securing the idler arm to the frame and remove the idler arm.

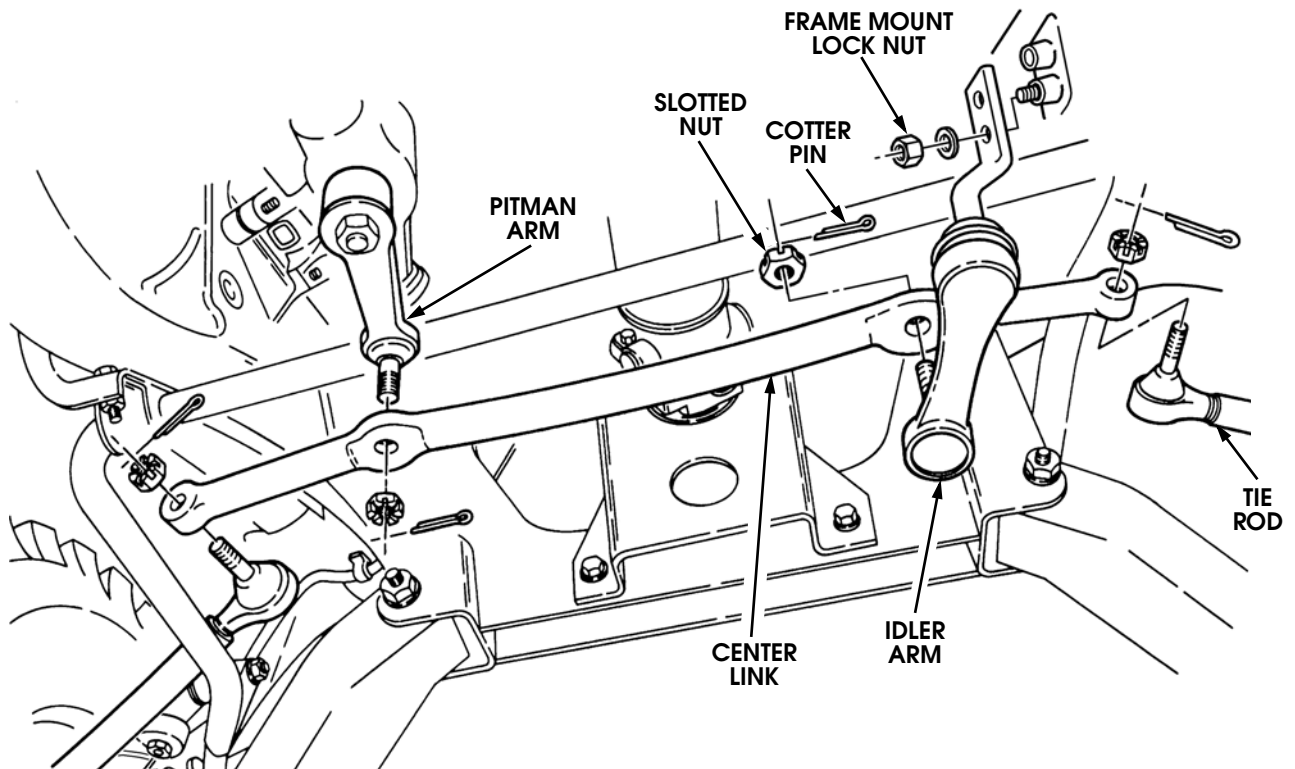


Figure 2: Idler arm and center link replacement.

Installation

1. Position the idler arm in the center link and loosely install the bolts, washers and nuts through the frame and idler arm.
2. Secure the idler arm to center link with the slotted nut and tighten to 80 lb-ft (108 N•m).
3. Install the cotter pin through the slotted nut. If necessary, tighten the slotted nut to align the holes for cotter pin insertion. **DO NOT** back off the slotted nut to align the holes.
4. Place the front wheels in the straight ahead position and tighten the idler arm to frame bolts and lock-nuts to 60 lb-ft (81 N•m).
5. Lubricate the idler arm and lower the vehicle.

Center Link Replacement

Removal

1. Raise and support the front of the vehicle.
2. Remove the cotter pin and the slotted nut securing the pitman arm to the center link (See Figure 2).
3. Remove the cotter pin and the slotted nut securing the idler arm to the center link.
4. Loosen, but do not remove, the bolts and locknuts securing the idler arm to the frame.
5. Remove the two cotter pins and slotted nuts securing the right and left tie rods to the center link.
6. Using puller J-24319-B or equivalent, remove the center link from both tie rods, the idler arm and the pitman arm.

Installation

1. Secure the center link to the pitman arm and the idler arm with two slotted nuts and tighten to 80 lb-ft (108 N•m).
2. Install a cotter pin in each slotted nut. If necessary, tighten the slotted nuts to align the holes for cotter pin insertion. DO NOT back off the slotted nuts to align the cotter pin holes.
3. Secure the right and left tie rods to the center link with two slotted nuts and tighten to 70 lb-ft (95 N•m).
4. Install a cotter pin in each slotted nut. If necessary, tighten the slotted nuts to align the holes for cotter pin insertion. DO NOT back off the slotted nuts to align the cotter pin holes.
5. Place the front wheels in the straight ahead position and tighten the idler arm to frame bolts and lock-nuts to 60 lb-ft (81 N•m).
6. Lower the vehicle.

Tie Rod Replacement

Removal

1. Raise and support the front of the vehicle.
2. Remove the cotter pins and slotted nuts from the center link end and the geared hub end of the tie rod (See Figure 3).
3. Using puller J-24319-B, remove the tie rod from the center link and the geared hub.

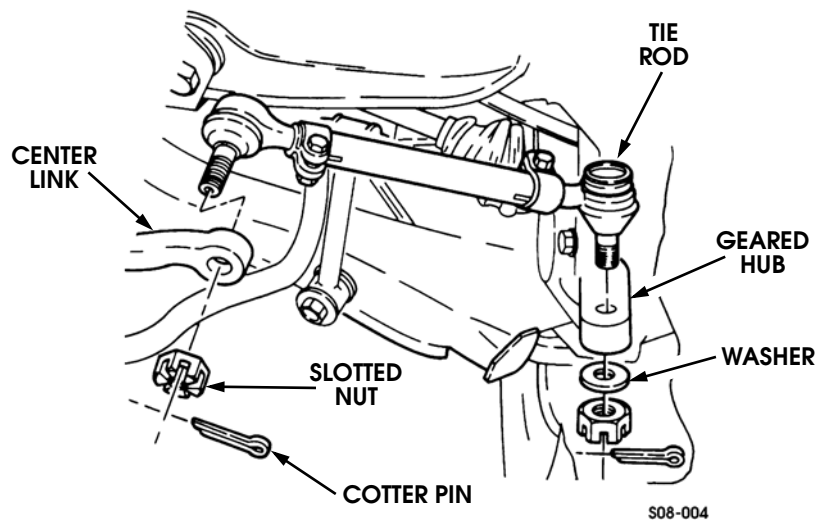


Figure 3: Tie rod replacement.

Disassembly

1. Loosen two locknuts and clamps securing the tie rod ends to the adjusting sleeve.
Note: Count the number of turns required to remove each tie rod end from the adjusting sleeve.
2. Remove both tie rod ends from the adjusting sleeve.

Assembly

1. Apply anti-seize compound to the threads in the adjusting sleeve.
2. Thread two tie rod ends into the adjusting sleeve, turning them the same number of revolutions that were required for removal.

Installation

3. Secure the tie rod to the center link with the slotted nut and tighten to 70 lb-ft (95 N•m).
4. Secure the tie rod to the geared hub with the washer and slotted nut. Tighten the slotted nut to 70 lb-ft (95 N•m).
5. Install a cotter pin in each slotted nut. If necessary, tighten the slotted nuts to align the holes for cotter pin insertion. DO NOT back off the slotted nuts to align the cotter pin holes.

Caution: Ensure that the outboard clamp faces the halfshaft and the inboard clamp faces away from the stabilizer bar (front only) or damage to equipment may result.

6. Before final tightening of the sleeve clamp hardware, center both tie rod end studs in their sockets (See Figure 4).

Caution: If the stud and socket are not properly aligned, a partial or complete lock-out of stud swing could result. Limiting stud swing can increase component wear and a complete lockout can cause component damage.

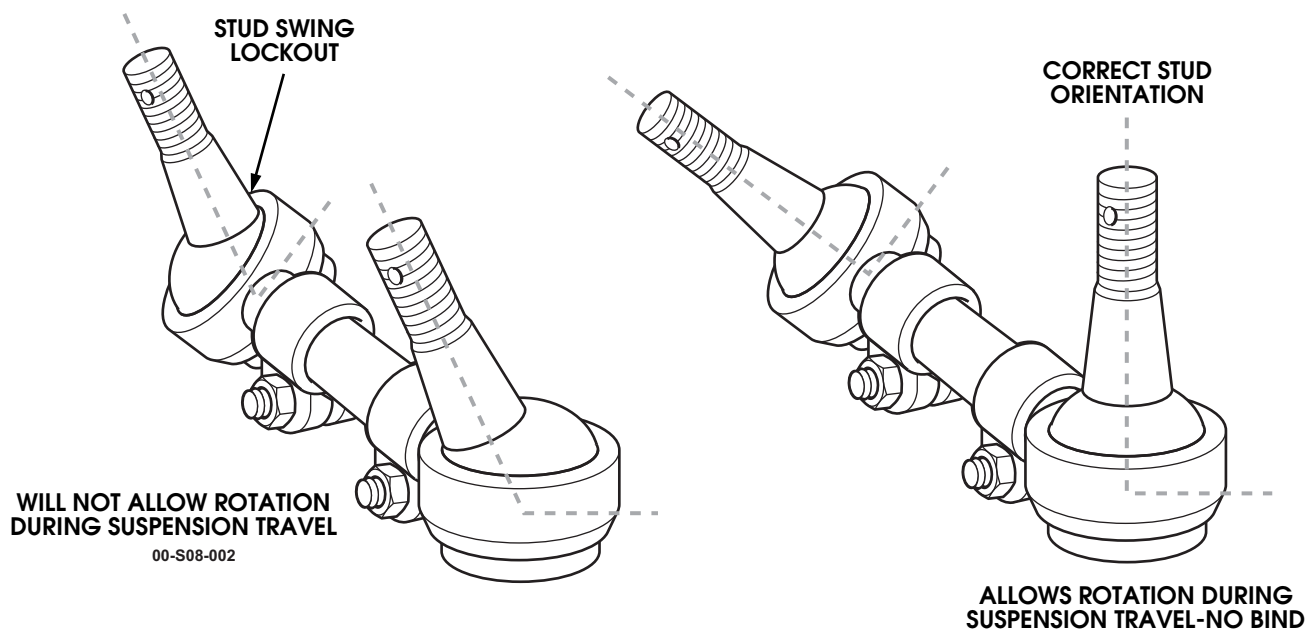


Figure 4: Tie rod end stud and socket orientation.

7. Lubricate tie rod ends.

8. Lower vehicle and align toe-in.

Caution: The sleeve clamps must be positioned between 3/16" and 5/16" from the end of the sleeve and the bolt and nut tightened to 30 lb-ft (41 N•m).

9. Align the sleeve clamps and tighten the bolt and nut assemblies to 30 lb-ft (41 N•m) (See Figure 5).

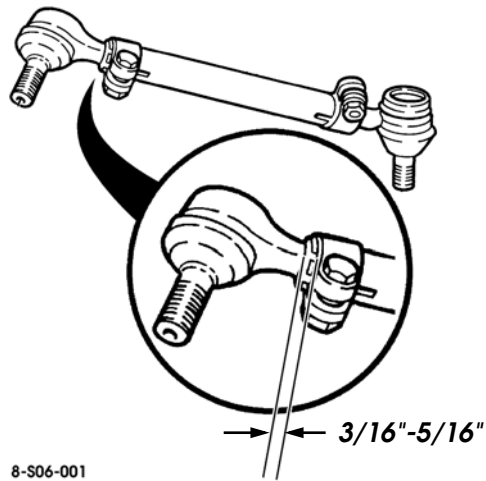


Figure 5: Tie rod sleeve clamp position.